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CONFIDENTIAL

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10 November 1953

Chief, []

Communications

Engineering

UPI-10

DOC <u>3</u>	REV DATE <u>8 MAY 1954</u>	BY <u>018373</u>
DRIG COMP <u>033</u>	DPI <u>56</u>	TYPE <u>02</u>
CRIG CLASS <u>5</u>	ACORN <u>2</u>	REV CLASS <u>C</u>
JUST <u>22</u>	NEXT REV <u>2010</u>	AUTH: HR 1-2

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REFERENCE: (A) Dispatch [] of 27 August 1953

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(B) [] of 27 October 1953

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1. When the UPI-10 is connected to a source of 220 volts D.C., the A.C. output voltage is in the nature of square waves; and while the output voltage will read high when using an effective reading meter, the rectified plate voltage is correct at 380 volts when the RS-6 power switch is set on 220 volts A.C. Considerable advantage was gained in form factor by sacrificing, to a reasonable extent, the regulation characteristic; the RS-6 load is practically constant under all conditions of operation. After many months of tests no ill effects could be traced to the RS-6 A.C. input circuit due to these conditions.

2. The radiated interference between the limits of 150 to 300 kc has been checked on the production prototypes and has been found to be sufficiently attenuated. Further tests will be conducted on production units to insure compliance with our requirements.

3. A heavy duty vibrator has been used in the UPI-10 to insure good unit life and vibrator starting. Acoustical measurements show that by far the greatest percentage of noise emanates from the vibrator alone. Restricting the vibrator seriously distorts the wave form and in consequence lowers the time efficiency and impairs the free starting characteristics of the vibrator. The following steps should be taken to reduce the mechanical noise:

a. To prevent sympathetic resonance with table tops, etc., set the UPI-10 on folded newspaper, sponge rubber, etc.

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b. If the noise is still too great for the particular operation, it is recommended that the unit be surrounded with sponge rubber with ventilation cutouts and attention given to temperature rise versus operating time.

c. In future models of the UPI-10 efforts will be made at the laboratory to decrease the noise, de-emphasizing to a feasible extent unit operating life, efficiency, and form factor.

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OC-E/R&D/AJS/ljm (10 November 1953)

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